



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR 1, 15, 20, and 54

[GN Docket No. 16-46; FCC 17-46]

FCC Seeks Comment and Data on Actions to Accelerate Adoption and Accessibility of Broadband-Enabled Health Care Solutions and Advanced Technologies

AGENCY: Federal Communications Commission

ACTION: Request for comments.

SUMMARY: The Federal Communications Commission (FCC) seeks comment, data, and information on a variety of regulatory, policy, and infrastructure issues related to the emerging broadband-enabled health and care ecosystem. The FCC seeks to ensure that consumers—from major cities to rural and remote areas, Tribal lands, and underserved regions—can access potentially lifesaving health technologies and services, like telehealth and telemedicine, which are enabled by broadband connectivity. The anticipated record will allow the Commission and its Connect2HealthFCC Task Force (Task Force) to gain a broader understanding about the current state of broadband health connectivity. The record will also be used by the Task Force to make future recommendations to the Commission.

DATES: Submit comments on or before May 24, 2017, and reply comments on or before June 8, 2017.

ADDRESSES: You may submit comments, identified by GN Docket No. 16-46, by any of the following methods:

- **Electronic Filers:** Comments may be filed electronically using the Internet by accessing the ECFS: <http://apps.fcc.gov/ecfs/> (click the “submit a filing” tab). Filers should follow the instructions provided on the website for submitting comments. For ECFS filers, in

completing the transmittal screen, filers should include their full name, U.S. Postal service mailing address, and the applicable docket number: GN Docket No. 16-46.

- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Marlene H. Dortch, Office of the Secretary, Federal Communications Commission. All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. The filing hours are 8:00 a.m. to 7:00 p.m. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class mail, Express Mail, and Priority Mail must be addressed to 445 12th Street, S.W., Washington, D.C. 20554.

Additional Filing Instruction: To the extent feasible, parties should e-mail a copy of their comments to the Task Force's e-mail box, at connect2health@fcc.gov. In the e-mail, please insert "Comments in GN Docket No. 16-46" in the subject line. Copies of all filings will be available in GN Docket No. 16-46 through ECFS and are also available for public inspection and copying during regular business hours at the FCC Reference Information Center, Portals II, 445 12th St., S.W., Room CY-A257, Washington, D.C. 20554, telephone (202) 418-0270. Documents will be available electronically in ASCII, Microsoft Word, and/or Adobe Acrobat.

People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an email to fcc504@fcc.gov or call the Consumer and Governmental Affairs Bureau at 202-418-0530

(voice) or 202-418-0432 (TTY). Contact the FCC to request reasonable accommodations for filing comments (accessible format documents, sign language interpreters, CART, etc.) by e-mail at: fcc504@fcc.gov; phone: 202-418-0530 or TTY: 202-418-0432.

FOR FURTHER INFORMATION CONTACT: For further information about this Document, please contact Ben Bartolome, Special Counsel, Connect2HealthFCC Task Force, at (770) 935-3383, or via e-mail at connect2health@fcc.gov (inserting "Question re GN Docket No 16-46" in the subject line). Press inquiries should be directed to Katie Gorscak, Communications Director, Connect2HealthFCC Task Force, at (202) 418-2156, or via e-mail at Katie.Gorscak@fcc.gov. For additional information about the Connect2HealthFCC Task Force, please visit the FCC's broadband health hub at <http://www.fcc.gov/health>.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's document, FCC 17-46, in GN Docket No. 16-46, released on April 24, 2017. The full text of this document is available on the Internet at the Commission's web site, at <https://www.fcc.gov/document/fcc-seeks-comment-accelerating-broadband-health-tech-availability>; and it is also accessible from the Connect2HealthFCC Task Force's web page, at <https://www.fcc.gov/health/public-notice>. The full text is also available for public inspection and copying from 8:00 a.m. to 4:30 p.m. Eastern Time (ET) Monday through Thursday or from 8:00 a.m. to 11:30 a.m. on Fridays in the FCC Reference Information Center, 445 12th Street SW, Room CY-A257, Washington, DC 20554 (Telephone: 202-418-0270; TTY: 202-418-2555).

Overview

Broadband networks are increasingly important to our national well-being and everyday lives. As such, we must maximize their availability and ensure that all Americans can take advantage of the variety of services that broadband enables, including 21st century health care. In this Document, the FCC seeks information on how it can help enable the adoption and

accessibility of broadband-enabled health care solutions, especially in rural and other underserved areas of the country. We expect to use this information to identify actions that the Commission can take to promote this important goal.

Ensuring that everyone is connected to the people, services, and information they need to get well and stay healthy is an important challenge facing our nation. Technology innovations in clinical practice and care delivery coupled with burgeoning consumer reliance on mHealth and health information technology (or healthIT) are fundamentally changing the face of health care, and a widespread, accessible broadband infrastructure is critical to this ongoing shift. Indeed, the future of modern health care appears to be fundamentally premised on the widespread availability and accessibility of high-speed connectivity. By some estimates, broadband-enabled health information technology can help to improve the quality of health care and significantly lower health care costs by hundreds of billions of dollars in the coming decades. However, the United States remains behind some advanced countries in the adoption of such technology.

As discussed in this Document, the Commission plays an important role in improving the quality of health care and enabling health care innovation through the universal service program, spectrum licensing, and other activities. In order to perform these and other important roles in the health technology space, the Commission should continue to evaluate the nation's broadband health infrastructure and to understand the ongoing technology-based transformation in health care delivery. This will better assure that consumers—from major cities to rural and remote areas, Tribal lands, and underserved regions—can access potentially lifesaving health technologies and services, like telehealth and telemedicine. Leading this effort on behalf of the agency is its Connect2HealthFCC Task Force. Among other things, the Task Force is charged with charting the broadband future of “health and care” in order to ensure that the agency stays ahead of the health technology curve. We use the phrase “health and care” deliberately in this Document to reflect and include the broad range of participants in the emerging broadband

health ecosystem, including providers (e.g., health systems, community health centers, clinicians, pharmacists, nutritionists, allied health professionals); public health and social service agencies and organizations; innovators and entrepreneurs; academic and research facilities; state and local policymakers; patients and their caregivers; as well as consumers who seek support to prevent disease and maintain optimum health.

This Document seeks comment, data, and information on a broad range of regulatory, policy, technical, and infrastructure issues related to the emerging broadband-enabled health and care ecosystem. Commenters should address the agency's authority on all issues raised in this Notice. The comment, data, and information requested are intended to provide the Commission with a broader understanding and perspective on the current state of broadband health technology and other related issues; and it will also inform the Task Force's work and recommendations.

The Broadband Health Imperative

Broadband holds promise for enabling health care solutions and advanced technologies that can help to meet America's growing health care needs. Health care accounts for a significant percentage of the U.S. gross domestic product and health care costs are projected to increase. Studies confirm that the United States has a serious health care supply problem. By some estimates, the country could face a shortage of up to 94,700 physicians by 2025, and the forecast is worse for rural communities. The healthcare provider shortfall is likely to disproportionately affect rural and remote areas which are already medically-underserved.

At the same time, demand for health care services is increasing. Today, over 320 million people in the United States could, at any time, utilize health care services, with one person added every 12 seconds (net), yet we only have approximately 280,000 primary care physicians to meet the needs. By the year 2060, the number of people living in the United States is projected to

increase by 100 million (resulting in a total of 425+ million people), further exacerbating the projected physician shortage concern. To further complicate matters, over 100 million Americans are dealing with chronic diseases and conditions (e.g., heart disease, stroke, cancer, obesity, diabetes, and arthritis); and despite best efforts, health care disparities persist across various geographic regions and ethnic groups. While many individuals struggle with one chronic illness, older Americans often face from two to as many as five chronic diseases at the same time. By 2030, one out of every five Americans (or 71 million) will be over the age of 65, and 20 million will be over the age of 80.

While broadband is not a complete answer, there are a growing number of broadband-enabled solutions that can play an important role in improving population health; addressing health needs beyond the hospital; expanding access to primary, acute, preventive and specialist care, especially for those Americans living in rural and underserved areas; providing more cost-effective solutions; improving the quality of care; and better engaging consumers in their health. Put simply, health care is being transformed by the availability and accessibility of broadband-enabled services and technologies and the development of life-saving wireless medical devices.

Indeed, we are already realizing some of the tremendous benefits that broadband-enabled health technologies and innovative wireless medical devices have to offer: Electronic Health Record (EHR) systems can track and transmit vast amounts of patient clinical data. X-rays, MRIs, and CAT scans can be transmitted seamlessly to specialists at a distant hospital. Telemedicine and telehealth programs and services provide opportunities to close access to care gaps and facilitate specialized training. Medical providers are able to prescribe medications electronically, saving time and money. Surgeons are able to perform operations miles away from patients via robotics. Self-service health kiosks are becoming increasingly available at pharmacies and grocery chains, providing additional access points for primary care and disease screenings. Remote patient monitoring applications and services are reducing hospital

readmissions as well as travel and associated expenses for patients. Mobile devices like smartphones and personal data assistants are transforming the way physicians manage patient care; they are also empowering and engaging consumers to take a more active role in managing their own health. Implant or body-worn monitoring, therapeutic, and treatment technologies include wireless blood glucose monitors and automated insulin pumps. "Ingestibles" and "smart pills" (broadband-enabled digital tools that are swallowed by the patient) use wireless technology to monitor internal reactions in real-time, dispense medication, and provide other granular health data.

Veterans, in particular, have seen tangible benefits from telemedicine. Most notably, critical mental health services are now accessible via telemedicine to those veterans living in rural areas or abroad. In fiscal year 2014, more than 690,000 military veterans accessed the U.S. Department of Veterans Administration's (VA) health care network using telemedicine programs, reflecting more than 1.7 million episodes of care. The Veterans Health Administration notes that "[telemedicine] technology is now considered 'mission critical' for effectively delivering quality healthcare to veterans, particularly for those in rural or underserved areas."

These are just some of the opportunities that broadband-enabled services and health-related communications technologies and devices offer, especially for those living in rural and underserved areas, low density populations, and Tribal lands; for older Americans; persons with disabilities; military veterans; and the economically disadvantaged—all of whom have traditionally faced significant health and care challenges. We endeavor to foster the development and accessibility of these and other emerging communications-based technologies throughout the country. The work ahead, however, can only be successful if it combines the efforts of all levels of government, industry, innovators and entrepreneurs, academia, consumers,

and the health care community. Accordingly, we seek broad public and private stakeholder input and collaboration on the issues discussed below.

Request for Comment and Data

As part of its charge, the Connect2HealthFCC Task Force is focused on the following objectives: (1) promoting effective policy and regulatory solutions that encourage broadband adoption and promote health IT; (2) identifying regulatory barriers (and incentives) to the deployment of radio frequency (RF)-enabled advanced health care technologies and devices; (3) strengthening the nation's telehealth infrastructure through the FCC's Rural Health Care Program and other initiatives; (4) raising consumer awareness about the value proposition of broadband in the health care sector and its potential for addressing health care disparities; (5) enabling the development of broadband-enabled health technologies that are designed to be fully accessible to people with disabilities; (6) highlighting effective telehealth projects, broadband-enabled health technologies, and mHealth applications across the country and abroad—to identify lessons learned, best practices, and regulatory challenges; and (7) engaging a diverse array of traditional and non-traditional stakeholders to identify emerging issues and opportunities in the broadband health space.

To continue evaluating these and other challenges, we request that stakeholders and other interested parties provide comment, information, and/or data on the issues and subject matter described below. This Notice seeks the most current information available that is specifically relevant to the intersection of broadband, advanced technology, and health care in view of the aforementioned Task Force objectives. For convenience, the issues for comment are enumerated; and we request that parties, in their submission, identify the enumerated issue to which their written response pertains. We also encourage parties to identify any other relevant issues not covered below.

Objective I: Promote effective policy and regulatory solutions that encourage broadband adoption and promote health IT.

Broadband and advanced technologies appear increasingly critical to the effective transformation of our health care system. First, these technologies enable the efficient exchange of patient and treatment information by allowing providers to access patients' electronic health records from on-site or hosted locations. Second, in many cases it can remove geography and time as barriers to care by enabling telehealth and telemedicine applications like video consultations and remote patient monitoring. Third, broadband provides a foundation for the next generation of medical devices, as well as other health innovation and connected-care solutions. Finally, broadband-enabled health IT offers real opportunities for consumers to take charge of their own health.

To ensure that these and other benefits continue to accrue and expand, it is critical that we identify and engage in appropriate efforts to address any current and emerging issues of concern. In this regard, we note that there are some broad policy measures that, if implemented, could accelerate broadband deployment generally, and thereby provide greater access to broadband-enabled health technologies, solutions and services, especially for those consumers living in rural and underserved areas of the country. A prime example is the possible establishment of “Gigabit Opportunity Zones.” In September 2016, FCC Chairman Ajit Pai, as part of his Digital Empowerment Agenda for accelerating the deployment of high-speed Internet access, called on Congress to provide tax and other financial incentives for the private sector to deploy gigabit broadband services in low income neighborhoods, which he referred to as “Gigabit Opportunity Zones.” More recently, the Commission created the Broadband Deployment Advisory Committee (BDAC) to provide the Commission advice on, among other things, accelerating broadband deployment, identifying regulatory barriers to infrastructure

investment, and making recommendations for reducing and/or removing regulatory barriers. We now seek additional and specific data regarding the pace of deployment and adoption of broadband for health and in health care. As detailed below, we also invite input on policies or initiatives that the FCC could implement to further spur deployment and adoption of broadband services, especially in critical need areas at the intersection of health and broadband (e.g., the counties identified in the Connect2HealthFCC Task Force’s Priority 100 and Rural 100 lists).

1. We request suggestions regarding ways in which the FCC, based on its authority, can further accelerate broadband adoption in the health care context and promote broadband-enabled health IT solutions, either on its own or working in collaboration with other agencies, and, at the same time, ensure that such services and technologies are fully available and accessible to all Americans, including those living in rural and remote areas, low density populations, Tribal lands, and in underserved urban areas of our country. We also seek comment on what impediments to these efforts exist, and how the FCC can address them.
2. We request information and data on the types, impact, scale, and benefits of broadband-enabled services and technologies used for the delivery of health care. How is broadband currently being used to augment or transform existing health care delivery? What types of health care settings are using broadband-enabled services and technologies besides large medical hospitals? What variety of medical issues are they used for? Where are these health care settings located? What are some of the future plans for using broadband-enabled health services and technologies – not just by clinicians and hospitals but also by other participants in the broader health ecosystem?
3. We are also interested in learning how health technologies and services can take advantage of new technological applications and emerging communications networks. For example, what impact will the Internet of Things (IoT) have on broadband-enabled

health technologies and services such as telehealth and telemedicine? To what extent will pervasive connectivity and a fully connected environment around individuals (e.g., IoT) shift the point of care delivery? How might the demands on broadband networks evolve in this new environment? What, if any, changes are anticipated in existing broadband-enabled health services and technologies—operating over current mobile networks—when 5G (Fifth Generation Mobile and Wireless Networks) becomes available? To what extent might telehealth and telemedicine be impacted by the availability of 5G networks? What medical device innovations are anticipated to be developed using 5G networks?

4. What technical issues concerning the variety of broadband-enabled health care solutions and technologies are appropriate and necessary for the FCC to consider with respect to efforts to accelerate broadband adoption and promote health IT solutions? Are there issues of concern with respect to access, availability, interoperability, capacity, reliability, privacy, security, and speed? If so, please describe them. Does consideration of any of these issues vary depending on the technology platform—e.g., digital subscriber line (DSL), cable, fiber, wireless, or satellite?
5. We seek to better understand health care providers' connectivity requirements. What type of connectivity (e.g., wired or wireless; fixed or mobile) is necessary to support the deployment of health IT applications today and in the near future at the different types of health care delivery settings (e.g., tertiary care centers versus primary care physician practices, larger physician groups, clinics, hospitals, as well as "hospital in the home" settings).
 - a. What are the minimum bandwidth and speed requirements for the different types of health IT applications available today and in the near future for clinical and non-clinical settings? We also seek comment on bandwidth constraints brought on by

increased overall usage as well as the impact of data intensive medical applications.

Are there future technologies or applications on the horizon that could be bandwidth intensive? If so, what are they, and to what extent could compression and other technologies provide a solution for such future technologies or applications?

- b. Some evidence suggests that real-time image manipulation and video (e.g., telestroke and tele-emergency applications) will stimulate demand for more and better broadband and at lower prices. Are there current issues concerning network speeds and delays for these types of services? Do mobile health applications present unique considerations in terms of coverage, reliability, and security? We seek suggestions on whether, and if so, how the Commission could address these issues.
- c. To what extent do rural communities and Tribal lands have access to Internet connection speeds that are sufficient to support the effective and efficient transmission of data and video to provide telehealth, telemedicine, and other broadband health technology services?
- d. What, if any, interoperability, capacity, reliability, security, and speed issues currently exist for wireless (i.e., radiofrequency (RF)-based) medical devices used by patients in both clinical and non-clinical settings (e.g., at home); and for healthcare providers with respect to the provision of broadband-enabled health technologies, like telehealth and telemedicine services? Are there other technical issues appropriate for the Commission to consider?
- e. What impediments, if any, exist in trying to retrofit existing and future health care facilities (e.g., hospitals and clinics) for broadband-enabled services and technologies, given current connectivity needs and the existence of varied spectrum environments? Do current designs take into consideration any potential interference concerns with projected wireless networks and devices that will be used in these

facilities? Are there (or should there be) industry standards or best practices for ensuring that new health care facilities consider broadband in their design and account for any necessary conduits, wiring, building configuration, and materials (e.g., there may be a need to consider certain materials for internal or external walls to better enable wireless broadband within a facility or to limit RF into a building) at the design and construction phase?

6. We seek to understand the full range of issues that might be affecting the development and adoption of broadband-enabled technology and services in health care. What non-technical impediments or issues currently exist in the provision of broadband-enabled health technology services? Are there any circumstances or practical considerations (e.g., cost, funding, and training) that may be creating disincentives for clinicians and health care settings to offer broadband-enabled health services and technologies, such as telehealth and telemedicine? If so, please describe what they are, including the extent and nature of the Commission's authority to address them.
7. What efforts are being made at the state and local levels to address broadband health technology accessibility issues in rural and remote areas, Tribal lands, and underserved urban areas? We seek specific information, particularly from states, localities, Tribal governments, and rural and urban medical centers, about any broadband-enabled health IT programs that have been developed and implemented (or will soon be implemented) to reach these areas. How successful have those programs been? What are some of the lessons learned in developing those programs? What programs and other efforts are necessary to drive attention to those rural and underserved populations that need health technologies most? How can the Commission better facilitate the deployment of services and technologies as well as consumer adoption in those areas?

8. We seek suggestions on ways the Task Force can effectively and efficiently identify any gaps in the availability of broadband-enabled health technologies in the country. We request any information, data, or studies that can better inform the Task Force as to where broadband-enabled health services and technologies are critically needed in the country but are insufficient or unavailable. Why do these availability gaps exist? Maps and data—including those commissioned by or for states or localities—would be particularly helpful. In August of 2016, the Task Force launched one such broadband health analytics tool—the Mapping Broadband Health in America platform—to allow stakeholders to more easily analyze and study the intersection between connectivity and health for every state and county in the United States. While the response to the platform—from other federal agencies, as well as private organizations and industry—has been uniformly positive, with some already using the mapping platform to improve data-driven decision-making around broadband health-related policies and initiatives, we seek additional stakeholder input. How can we further improve the analytic platform to encourage investment in broadband health networks in areas with the greatest health and connectivity needs? If we wanted to refine the tool to identify potential partnerships among health care providers or between health care providers and broadband service providers, what is the best way to achieve that goal?
9. What are the impediments to making health IT and other broadband health technology services available and ubiquitous in rural and remote areas, low population density areas, Tribal lands, and underserved urban sectors? Are there any unique challenges that persist in these areas; if so, what are they? In particular, we seek comment on any deployment, infrastructure, geographic, expertise (e.g., the availability and adequacy of IT expertise), telecommunications carrier availability, cost, and any other challenges in these areas. We

seek suggestions for how to address such challenges, including on any rule and/or policy changes that the Commission should consider.

Objective II: Identify regulatory barriers (and incentives) to the deployment of RF-enabled advanced health care technologies and devices.

The Commission has a long history of addressing spectrum needs for the development of next- generation health technologies and medical devices, and of exercising flexibility, as necessary and appropriate, in revising its rules and policies to speed up their deployment. However, in recent months, stakeholders in the health sector and commercial wireless industry have raised concerns about the likely surge in demand for spectrum for wireless medical devices and broadband-enabled services—noting trends toward fully connected hospitals, widespread remote patient monitoring, and leveraging connectivity to improve health facilities’ workflow and back-office functions—and have sought appropriate regulatory relief. Most recently, in August 2016, TerreStar Corporation filed a request for waiver of its substantial service requirements to enable use of its wireless licenses in the 1.4 GHz band to provide wireless medical telemetry service (WMTS) operations, citing increasing demand. Several wireless medical device manufacturers supported the waiver request and argued that there was a spectrum shortage facing WMTS licensees.

Below, we seek information and data on (i) the types of broadband-enabled health technologies and medical devices currently in the market and those that may be launched in the near future; (ii) the future spectrum and wireless infrastructure needs in the health care sector; and (iii) any concerns about the increased use and proliferation of wireless medical devices in health care settings and public spaces. Also, we welcome comment on what, if any, regulatory barriers exist (as well as incentives that could be implemented) concerning the deployment of advanced broadband-enabled health care technologies and medical devices. For purposes of this

Document, we are only seeking information on "medical devices" that use RF wireless technology or communications functions for diagnosis, treatment, or patient monitoring.

10. We seek information on the types of broadband-enabled health technologies and medical devices that are currently in the market. In addition, what emerging types of broadband-enabled health technologies and medical devices are likely to be available to consumers soon? What are the future trends in this market area?
11. What, if any, technical issues or concerns exist for patients and other users of medical devices when such devices are used in hospital settings? Do these concerns vary depending on the type and size of the hospital setting? Are these concerns exacerbated when medical devices are operating in large or busy hospital environments (which may include a wide variety of wireless technologies, some of which may be unrelated to clinical care); if so, what are those concerns, how can they be addressed?
12. Similarly, what, if any issues or concerns exist for patients and other users of medical devices when such devices are used primarily in potentially uncontrolled, non-hospital settings (e.g., in homes, aircraft, cruise ships, or other close quarter, multi-unit dwellings, etc.), where non-health related wireless technologies that also emit radio frequencies (e.g., baby monitors, wireless home security systems, Wi-Fi routers, etc.) may proliferate? And to what extent might similar issues or concerns exist for emerging and future technological innovations (e.g., electric automobiles, smart cars, smart homes, etc.)?
13. We seek comment, data, and any studies on the possible complexities of the future RF environment in homes, hospitals, and other public spaces related to the increasing number of medical applications and devices.
14. How are medical devices currently being tested and evaluated to ensure that consumers and patients can safely use them in both clinical and non-clinical settings, given their

operation in varied spectrum environments? Are there currently any FCC rules or policies that serve as barriers to testing and deployment of advanced health care technologies and medical devices? If any, please identify which specific rules and/or policies, and explain how they have served to impede the testing and deployment of health care technologies and medical devices. How might the Commission address such concerns?

15. We also request recommendations on how the Commission could make an assessment of the spectrum and wireless infrastructure needs for the future of health care in the United States. We seek input from all relevant stakeholders, including members of the health care, wireless, and software industries who are developing wireless healthcare applications for the present and future; physicians, consumer advocates, and academicians; and relevant federal, state, and local government agencies. While we envision building upon the spectrum management and wireless infrastructure deployment policies that the FCC has successfully employed in the past to promote innovation in wireless health services, we ask commenters to identify any novel framework, including those that might include smart city initiatives or public/private partnerships, that could be useful in planning for the wireless future of our nation's health care system.

- a. One of the compelling drivers of mobile technology in healthcare is the increasing availability of health apps for smartphones and tablets. There is now an app for almost every conceivable healthcare need, ranging from drug dose calculators to fully functioning electronic medical records. We are also seeing the development of smart homes and automobiles that would enable even more sophisticated remote health monitoring. How soon will we see widespread adoption of these technologies and what implications will they have on the spectrum needs of the health care industry?

- b. In developing a national spectrum plan for the health care industry, are there particular spectrum bands that the FCC should consider?
- c. When it comes to increased need for spectrum-based health technologies, what challenges do small, rural, and critical access hospitals have that are different from what large hospitals face?
- d. Do health care facilities, because of their different physical characteristics, require different types of small cells and wireless infrastructure than other commercial enterprises? What are the most challenging impediments to the deployment of wireless infrastructure in hospitals and health care systems? What policies should the FCC consider in order to help streamline infrastructure siting that is necessary for the deployment of wireless networks in hospitals and health care systems? What state or local government regulatory policies have helped to facilitate streamlined deployment of wireless infrastructure for health care?
- e. How can new advanced spectrum sharing techniques (e.g., dynamic spectrum sharing through database controlled coordination, software designed radios, or efficient spectrum use through network virtualization techniques) or secondary market mechanism (e.g., spectrum leasing arrangements) be leveraged to meet the spectrum demands of cutting-edge mobile broadband-enabled health technologies and medical devices that may be operating in varied spectrum environments? Are there any issues with harmonization of spectrum for medical uses across international borders to ensure that consumers can effectively and safely use medical and other devices across borders?
- f. What are some of the recent and emerging trends in health care delivery (in rural and urban areas) that are implicating spectrum use and needs? Are these trends creating

a greater need for spectrum wireless services, particularly in rural areas? Are these trends resulting in increased use of remote patient monitoring solutions?

16. Do any regulatory barriers exist concerning the deployment of advanced broadband-enabled health care technologies and medical devices? We also welcome suggestions on any regulatory incentives (that are within the FCC's authority) that could serve to foster continued investment in and further deployment of next-generation broadband-enabled health technologies and medical devices?

Objective III: Strengthen the nation's telehealth infrastructure through the FCC's Rural Health Care Program and other initiatives.

Broadband deployment is one of the FCC's top priorities, particularly in rural America. Based on current evidence, broadband can be a game-changer particularly in rural areas—where consumers often have to drive long distances to access critical or specialty care; and where isolated clinics and health centers can save lives and promote community health by using advanced communications technologies to connect with medical expertise not otherwise available, as well as monitor patients who live many miles away from a health care facility.

The FCC's Rural Health Care (RHC) Program has helped expand broadband services for eligible health care providers (HCPs) in rural areas. Currently, the RHC Program is comprised of three programs: the Healthcare Connect Fund (HCF), the Telecommunications Program, and the Pilot Program. With respect to the Pilot Program, while no new funding is available, some projects continue to accept new HCP sites. As funding for the Pilot Program projects ends, Pilot Program projects are expected to apply for additional support, if needed, under the Healthcare Connect Fund. The FCC established the Healthcare Connect Fund to expand health care provider access to broadband, especially in rural areas, and encourage the creation of state and regional broadband health care networks. Under the Healthcare Connect Fund, eligible rural

HCPs, and those non-rural HCPs that are members of a consortium that has a majority of rural HCP sites, can receive a 65 percent discount from the fund on all eligible expenses. HCPs are required to contribute the remaining 35 percent to participate in the program. HCPs can use the Healthcare Connect Fund to purchase eligible services and equipment, as well as construct their own broadband infrastructure where it is shown to be the most cost effective option. The cap on total funding for the RHC Program altogether, which includes the Telecommunications Program and the Healthcare Connect Fund, is \$400 million annually.

The Commission's RHC Program has made the benefits of broadband-enabled health services, such as telehealth and telemedicine, more available to consumers living in rural and remote areas. Such broadband-enabled services have provided patients in rural areas with access to critically needed medical specialists in a variety of practice areas. The availability of telehealth and telemedicine programs also has been found to mitigate significant challenges associated with disparities in access to care and healthcare workforce shortages. The RHC Program also has been found to save health care providers money as well. The Commission continues to evaluate the Healthcare Connect Fund (HCF) in terms of the programmatic goals of (1) increasing access to broadband for HCPs, particularly those serving rural areas; (2) fostering the development and deployment of broadband health care networks; and (3) maximizing the cost-effectiveness of the program.

17. We seek comment and suggestions on how the FCC can further promote and help enable the adoption and accessibility of broadband-enabled health technologies, like telehealth and telemedicine, in rural and other underserved areas. Are there other initiatives or actions beyond the RHC Program that the agency, or the Task Force on behalf of the agency, could pursue in order to promote and help enable the adoption and availability of broadband-enabled health technologies in rural and underserved areas of the country?

18. Is the regulatory framework for the Rural Health Care program keeping pace with how broadband-enabled health care is being delivered in rural and underserved areas? If not, please explain in detail, describing any emerging challenges, gaps or opportunities for using broadband to better meet the health and health care needs of rural consumers.
19. We seek current information and data, if any, that can be used to measure the impact that the various RHC programs have had on certain populations and sectors—i.e., those living in rural and underserved areas, low density populations, and Tribal lands; older Americans; persons with disabilities; military veterans; and the economically disadvantaged in rural and urban communities—all of which have traditionally faced significant health and health care challenges.
20. We also are interested in hearing recent success stories about innovative health care services that were created or that became available as a result of the RHC Program, and how such services have helped consumers in rural and remote areas. We are particularly interested in receiving data and information about health outcomes, return on investment, and the ability to reach such underserved population groups. First-person accounts are welcomed.
21. We seek information, data, and studies that identify specific rural areas and underserved regions of the country that need funding assistance for the purchase of high-capacity broadband connectivity, connections, and any other services or equipment authorized under the RHC Program rules. We seek detailed information and data as to whether eligible health care providers in these areas and regions that require funding assistance have participated in the RHC Program, and if not, why not. We also seek suggestions on how the Commission can encourage or facilitate their participation. Are there specific challenges of which the Commission should be aware?

22. The Task Force is interested in identifying all currently available public (federal, state, or local) and private (e.g., non-profit or philanthropic organizations) funding sources for the provision of broadband-enabled health technologies and services (e.g., telehealth and telemedicine) in rural regions, Tribal lands, and in other underserved areas (including underserved urban areas), as well as for vulnerable populations. Please provide information about those funding sources, as well as their website address, if any.
23. We seek any other comment, information, and data concerning the RHC Program as well as the general needs of rural consumers for broadband-enabled health solutions that would be helpful to the Task Force, given its charge and objectives.

Objective IV: Raise consumer awareness about the value proposition of broadband in the health care sector and its potential for addressing health care disparities.

It is critically important that consumers fully understand the practical and personal benefits of broadband in health care and in facilitating greater care coordination, proactive engagement in disease prevention, and self-management. Placing more care decisions in the hands of consumers and personalizing that experience appears to be a major theme in health applications and product development today. We also recognize that as consumers fully realize the practical health benefits of broadband, consumer demand for broadband-enabled health services and technologies will serve to further accelerate broadband deployment and adoption altogether—a national priority.

24. We seek suggestions on how the Commission can effectively increase consumer awareness about the value proposition of broadband in the health care sector? Are there any practical efforts that the Commission can undertake to accelerate consumer adoption of broadband, and in particular broadband-enabled health services and technologies, especially among underserved populations? How might the Commission ensure that

certain groups—e.g., rural consumers, those living on Tribal lands, older Americans, people with disabilities, military veterans, non-English speakers, and the economically disadvantaged—are fully aware of the availability and benefits of broadband-enabled health services and technologies? Are there any states, cities, and organizations engaged in similar efforts that could lead to potential partnerships?

25. We also seek comment on any concerns that may discourage consumers, health care providers, and others from adopting broadband-enabled health services and other advanced health technologies, including telehealth and telemedicine services and emerging medical devices. To what extent do safety, security, reliability, and privacy concerns influence adoption of broadband-enabled health services and other advanced technologies? To what extent do costs, socioeconomic status, and digital literacy issues impact adoption?
26. We request information on any studies, pilots, research, or other data that quantifies the benefits of broadband-enabled health technologies in improving patient outcomes and in reducing costs. What kind of return on investment have pilot and demonstration projects experienced?
27. We are interested in learning how broadband can enable healthcare-related support systems to connect patients to the people, services and information they need to get well and stay healthy. In this regard, physicians inform us that there is growing recognition that the need for social services and supports (e.g., nutritionists, dieticians, pharmacists, family caregivers, fitness centers, and other health care supports or supporters outside the traditional hospital setting) significantly impact the ability of some consumers to become healthy and stay well, and that the availability of broadband is increasingly essential to bridging the various services and supports. We seek comment and suggestions on how the Commission can support the development and availability of these new broadband-

enabled services and supports (outside the RHC Program) especially on Tribal lands and in rural, remote, and other underserved areas?

28. We seek information and any studies about how broadband-enabled services and technologies have been, and could be used, to address health and health care disparity issues, and the impact (and successes) such services and technologies have had in addressing such issues.

29. Are there any practical issues (e.g., the lack of a home computer) that may be impeding consumer awareness and adoption of broadband-enabled health technologies? What efforts can be undertaken to help alleviate some of these issues?

Objective IV: Enable the development of broadband-enabled health technologies that are designed to be fully accessible to people with disabilities.

The availability and accessibility of broadband-enabled health technologies designed to serve the needs of Americans with disabilities is critically important. One recent study estimates that, in 2013, the overall percentage of people with a disability in the U.S., among the civilian noninstitutionalized population, was 12.1 percent or approximately 37 million people. Other studies suggest that the number is higher than 50 million, and that it is predicted to continue to increase. Given these statistics, it is imperative that we do what we can, within our statutory authority, to promote the goal of making broadband-enabled health technologies and cutting-edge health and medical devices and applications available, accessible, and usable by people with disabilities.

Technology has historically played an important role in the disability community. Many people with disabilities use communications technology, devices, or services in their daily lives, and broadband is becoming an essential data transmission platform that enables a wide range of services and tools. Ensuring that people with disabilities are able to access electronic health

records, engage in video consultation with their physicians, fully utilize the latest health apps, and benefit from advances in wearable health technology, for example, are essential to the ongoing health care transformation. Consistent with its charge, the Task Force will consider the extent to which broadband-enabled services and technologies used for the provision of health *and* care are available, accessible, and usable by all Americans, including those with disabilities. We therefore seek any data, information, and comment that will assist the Commission in better understanding how it may assist in achieving these important goals.

30. How are broadband-enabled health technologies and medical devices currently being used by people with disabilities? To what extent can these technologies and devices address the health care needs of people with disabilities in the future? Provide specific examples of the existing barriers, if any, that these technologies and devices pose for people with disabilities.
31. We seek comment on whether the design and development of broadband-enabled health services and technologies, as well as cutting-edge health and medical devices and applications, are accessible to, and usable by, people with disabilities. Are there practical concerns or other issues that are inhibiting or limiting the use and availability of broadband-enabled health services and technologies for people with disabilities? How are hospitals and clinicians currently addressing, if at all, any of these issues? An increasing number of health care services provide patient portals for patients to access medical records and communicate with physicians and specialists. What measures are taken to ensure that these mechanisms are fully accessible to users with disabilities (e.g., accessible via screen readers used by individuals who are blind)?
32. To what extent are clinicians aware of video relay service (VRS) and using it when remotely consulting with American Sign Language (ASL) users on a telephone call? Is there a need for VRS providers to have ASL interpreters with a knowledge of (and ability

to translate) specialized health or medical vocabulary? Should a VRS call that involves consultations between a deaf or hard of hearing person and a doctor be given priority over other calls waiting in a queue, especially when there is a possible medical emergency? We also seek comment as to whether our telecommunications relay service (TRS) rules are currently optimized to encourage medical consults via telemedicine?

33. We seek suggestions as to how the Commission can effectively raise awareness among people with disabilities about the value proposition of broadband in health? How can the Commission help to enable the adoption and accessibility of such services and technologies among people with disabilities, especially given our authority?

Objective VI: Highlight effective telehealth projects, broadband-enabled health technologies, and mHealth applications across the country and abroad—to identify lessons learned, best practices, and regulatory challenges.

Related to the objective of increasing consumer awareness about the practical health-related benefits of broadband is the need to inform the public—especially those in rural and underserved regions—about the availability and successes of the many broadband-enabled telehealth and telemedicine centers and projects across the country and abroad, as well as existing and emerging mHealth applications, and to identify lessons learned and best practices.

34. We seek current information and data on the effectiveness of broadband-enabled telehealth and telemedicine services, including any recent research on these services. How are patients responding to these services? We are particularly interested in receiving comments directly from consumers about their experience with these and other broadband-enabled services and technologies.

35. We also seek comment on specific challenges faced by states, localities, and Tribal governments, as well as communities abroad, in deploying effective broadband-enabled telehealth and telemedicine projects.
36. We seek comment on how the public can be better informed about the availability of broadband-enabled health services and technologies and mHealth applications. What have states, localities, other federal agencies, Tribal governments, and hospitals and clinics done to inform the public about the availability of these options? How effective have these projects been in promoting greater broadband utilization?
37. We seek submissions of any case studies, research and video/audio summaries concerning recently launched applications/programs that are on the cutting edge of telehealth, telemedicine, mHealth, and other broadband-enabled health technologies and services.
38. We seek comment on the extent to which the United States is not taking full advantage of the opportunities that broadband-enabled health technology provides. For countries that have been the most successful in making broadband-enabled health services and technology more widely available, especially in rural and underserved areas, we seek information on the approaches that such countries took (including lessons learned) in achieving success in broadband health adoption.

Objective VII: Engage a diverse array of traditional and non-traditional stakeholders to identify emerging issues and opportunities in the broadband health space.

Published reports indicate that the “the health IT industry is gaining a reputation as an emerging sweet spot for technology investors.” We want to be sure that Commission policies do not present obstacles to continued innovation and investment in broadband-enabled health technologies, including medical devices that rely on communications technology. We observe

that there is a growing desire for such technologies—including those that are wearable or otherwise track and monitor personal health—and that this emerging health market is estimated to be worth billions. There are also countless smartphone apps that track health-related issues. By some estimates, there are over 100,000 digital health apps offered in the three major app stores. In addition, recent advances in broadband-enabled sensor technology offer the potential for the emergence of more convenient and ultimately less costly and less invasive health care solutions. For example, we may soon see the widespread use of smart clothing (or smart "tattoo" applications) that use skin-based sensors to measure things like heart rate, respiration, and blood pressure. Robotics, virtual reality, and other consumer facing health technologies also offer the potential to help older Americans live more independently. Some technology companies are even experimenting with combining web search with online health consultations for a one-stop offering. To help inform the Commission in its related and other efforts in this area, we seek comment and information on these and other emerging health technologies, applications, services, and connected medical devices.

39. We seek comment on any emerging issues of concern (that have not been identified in this Document) that potentially impact efforts to accelerate the availability of broadband-enabled health technologies and services, as well as medical devices that rely on communications technology.
40. While the United States has made great strides in recent years, many advances in digital health technologies are still not broadly available, widely utilized, or well-tailored to meet the needs of all Americans. We seek comment on these concerns.
41. What are the emerging opportunities for investors, innovators, and entrepreneurs in the broadband health space and in the development of the next generation of connected health technologies and converged medical devices? We seek suggestions on any efforts that the Commission might undertake to support innovation and entrepreneurship in these

areas. Are there emerging or non-traditional stakeholders that should be part of the Commission's efforts? If so, please identify them and their respective roles in or contributions to the broadband health space.

42. We seek comment on how to promote small and diverse investors, innovators, and entrepreneurs in the broadband health sector in order to better ensure that the benefits of broadband-health technologies and services are available to all Americans.

43. We seek to engage all potential stakeholders in this national broadband health effort. Commenters should identify any additional stakeholders that are not specifically referenced in this Document. We also encourage parties to identify any other relevant issues (not covered in this Notice) for the Task Force, given its charge and objectives.

Administrative Matters. Because this Document does not itself initiate a "proceeding," responses to the Document are not "presentations" subject to the prohibitions in restricted proceedings and the disclosure requirements in permit-but-disclose proceedings. Nonetheless, parties discussing or providing information to the Task Force or any other members of the Commission regarding the issues raised in this Document are strongly encouraged to file a memorandum in the docket, summarizing their discussion and/or information.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch,

Secretary.

[FR Doc. 2017-09309 Filed: 5/9/2017 8:45 am; Publication Date: 5/10/2017]